

Section 3

NEURO-LINGUISTICS: WAYS TO FIND NEW MEANINGS

DOI 10.15826/B978-5-7996-3073-7.14

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The emotional effects of positive and negative news through the default mode network

Abstract. News media can have a powerful effect on people's physiology, thinking, and emotions. This study aims was to examine the effects of positive and negative news on optimism, pessimism, self-esteem, and depression. The survey covered students from the Department of Journalism of the University of Istanbul and involved 61 participants — 35 women and 26 men. While people from the first group were asked to read positive news, the second group read negative news. In order to measure the level of optimism and pessimism of our participants, they were asked then to choose at least four optimistic and pessimistic adjectives. Rosenberg Self-Esteem scale was used to determine changes in self-esteem and depression. Results suggested that people who read positive news were more optimistic about their future (M optimism = 5.92, SD = 1.75), and less pessimistic (M pessimism = .88, SD = 1.5). When people read negative news, they chose more pessimistic adjectives (M pessimism = 4.36, SD = 2.44), and fewer pessimistic ones (M optimism = 1.88, SD = 1.94). Moreover, when people read positive news, they showed less signs of depression (M depression = 1.6, SD = .70) than when people read negative news (M depression = 3.06, SD = 1.37).

Finally, we found no significant differences in the level of self-esteem when participants were exposed to positive and negative news.

Keywords: Positive news, negative news, self-esteem, optimism, pessimism, depression, self-esteem, positive psychology

Introduction. We can distinguish between positive, neutral and negative news. Positive news contains inspiring stories about hope and cooperation that incite positive emotions, whereas negative news includes dramatic, traumatic, hopeless, gloomy, and criminal stories, which are associated with negative emotions. Negative news exacerbates the negative mood in individuals while positive news, on the contrary, makes them feel more optimistic [1]. Negative and positive news changes the emotion, and emotions shape cognition. A survey of 4,675 adults indicated that exposure to traumatic news might be as effective as real traumatic exposure [2].

Emotion, cognition, and physiological reactions to different news may affect people's vision of their future. When people read stories, their Default Mode Network (DMN) is activated. DMN consists of the medial prefrontal cortex, posterior cingulate cortex, hippocampus, and orbitofrontal cortex [3], which are connected with daydreaming, imagining, planning, retrieval of personal memories, personal meaning-making, monitoring of one's emotional state, and reflective compassion.

Materials and Method. In the Turkish version of Rosenberg Self-Esteem Scale [4], [5] with the sub-scale of self-esteem and depression and 9 optimistic/pessimistic adjectives, was used in this study. Our survey covered 61 undergraduate students from the University of Istanbul (35 females, 26 male) aged 18–26. While people from the first group were asked to read positive news, the second group read negative news. Individuals who read positive news were asked to imagine that they had received a positive feedback from social media, while people who read negative news were asked to think that they had received negative feedback from social media for one minute. This was done in order to activate their Default Mode Network. In order to measure the level of optimism and pessimism of our participants, they were asked to choose at least four optimistic and pessimistic adjectives and to complete their self-esteem and depression sub-scales. Statistical analysis was implemented by using the Pearson correlation test and paired t-test.

Table 1. Contents of negative news

Camera images of a murdered student
Panic attack increases among adolescents
A suicide story: Madison Halleron
Water in Turkey may be unsafe for drinking
Unemployed journalist
A scientist warns about a severe earthquake

Table 2. Contents of positive news

Aziz Sancar: The way to the Nobel Prize
Lifespan is getting longer
Story of a one-armed 7-year-old professional athlete
Young people with autism have hope
A library is established with the help of social media
A photographer shows that the humankind is not dead

Results.

1. Optimism and Pessimism Mean After Exposure to Positive and Negative News

Our results showed that people who read positive news were more optimistic about their future (M optimism = 5.92, SD = 1.75), and were less pessimistic (M pessimism = .88, SD = 1.5), while participants who were exposed to negative news demonstrated opposite emotions. When people read negative news, they chose more pessimistic adjectives (M pessimism = 4.36, SD = 2.44) and fewer optimistic ones (M optimism = 1.88, SD = 1.94). When the data were computed, paired t-test significant differences were obtained between the groups. In pair one, the levels of pessimism and optimism were compared for people who read negative news, conditions — $t(24) = 5.96$, $p = 0.001$. Then the same procedure was conducted for people who read positive news and their optimism levels were measured, conditions — $t(24) = -7.65$, $p = 0.001$.

2. Effect of News on Self-Esteem

In the second hypotheses to examine differences in self-esteem of participants who read positive and negative news. The Pearson correlation test was used. Results suggested that there was no significant correlation in the self-esteem level when people read positive and negative news

($r = -.12$, $p = .58$). When people read positive news, they showed a slightly higher self-esteem level (M self-esteem = 1.02, $SD = .83$) than when people read negative news (M self-esteem = 1.44, $SD = .87$). The score evaluation is as follows: 0–1 = High self-esteem, 2–4 = Moderate self-esteem, 5–6 = Low self-esteem.

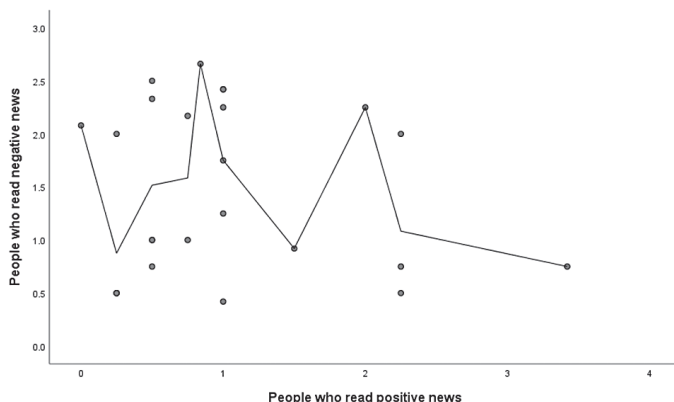
Table 3. Descriptive characteristics for the participants who read positive news, score ($N = 25$)

Variable	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Self-Esteem	1,02	0,827	0	4
Depression	1,60	0,707	1	6
Pessimism	0,8800	1,50886	0,00	6,00
Optimism	5,9200	1,75404	1,00	9,00

Table 4. Descriptive characteristics for the participants who read negative news, score ($N = 36$)

Variables	<i>Mean</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
Self-Esteem	1,44	0,870	0	4
Depression Mood	3,06	1,372	1	6
Pessimism	4,4722	2,36022	0,00	9,00
Optimism	1,8611	2,01640	0,00	7,00

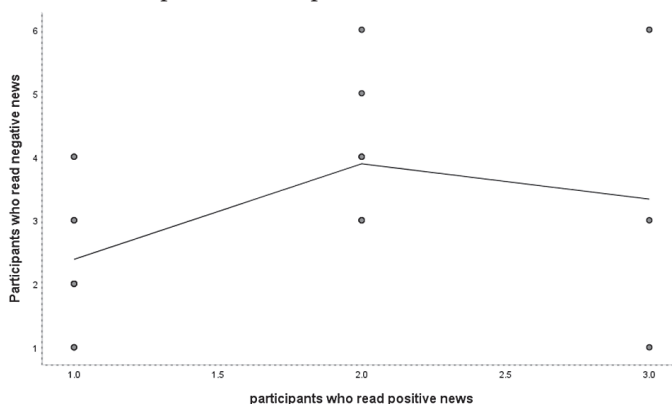
Table 5. Scatter plot for the self-esteem score



3. Effect of News on Depression

In the third hypotheses to compute the effect of positive and negative news on depression, the Pearson correlation test was implemented. The results indicated that there were significant differences in depression in people exposed to negative and positive news ($r = .41$, $p = 0.04$). When people read positive news, they were less prone to depression (M depression = 1.6, $SD = .70$) than when they read positive news (M depression = 3.06, $SD = 1.37$). The score evaluation is as follows: 0 = No depression mood, 1–2 = Low depression mood, 3–4 = Moderate depression mood, 5–6 = High depression mood.

Table 6. Scatter plot for the depression score



Conclusion. When people are exposed to negative news, they tend to see their future in a pessimistic light and be more prone to depression, whereas as people read positive news stories, they have an optimistic outlook and are less likely to suffer from depression.

1. de Hoog N., Verboon P. Is the news making us unhappy? The influence of daily news exposure on emotional states // British journal of psychology. 2020. № 111(2). P. 157–173.

2. Holman E. A., Garfin D. R., Silver R. C. Media's role in broadcasting acute stress following the Boston Marathon bombings // Proceedings of the National Academy of Sciences of the United States of America. 2014. № 111(1). P. 93–98.

3. Andrews-Hanna J. R., Reidler J. S., Sepulcre J., Poulin R., Buckner R. L. Functional-anatomic fractionation of the brain's default network // *Neuron*. 2010. № 65(4). P. 550–562.

4. Rosenberg M. *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press, 1965.

5. Çuhadaroğlu F. *Adolesanlarda Benlik Saygısı*. Ankara: Hacettepe Üniversitesi, 1986.